

Application Serial No. 10/662,718
Reply to Office Action of September 2, 2005

PATENT
Docket: CU-3360

REMARKS

In the Office Action, dated September 2, 2005, the Examiner states that Claims 1-26 are pending, Claims 1-6 are rejected and Claims 7-26 are withdrawn. By the present Amendment, Applicants amend the claims.

In the Office Action, Claims 1-3 and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kawase (US 6,730,357) in view of Roitman et al. (US 6,137,221) and Noguchi (US 5,606,356). Claim 4 is rejected in further view of Pham et al. (US 2002/0127344). Claim 6 is rejected in further view of Mian et al. (US 6,319,469). The Applicants have amended independent Claim 1 and consider the amendment to overcome the above rejections.

The invention described in amended Claim 1 is a method for manufacturing an organic EL display, in which a process of "discharge-placing at least an organic EL material in a form of solution on a substrate" and a process of "drying the organic EL material in a form of ink immediately after being placed on the substrate by heating while relatively moving a heating device in X (longitudinal), Y (lateral), and Z (vertical) directions to the substrate" are carried out sequentially and continuously. Accordingly, the organic EL material is forcibly dried by heating immediately after being discharged on the substrate. The amendment to Claim 1 is based on examples described in the specification.

In the present invention, since the heating device moves in X (longitudinal), Y (lateral), and Z (vertical) directions relative to the substrate, the device can effectively move to a region where the organic EL material is placed on the substrate immediately after its placement. Thus, it is possible to dry the organic EL material to form an organic EL layer that is especially flat. Furthermore, even in the case where the organic EL material is coated in such a manner that the heating device reciprocates parallel to the substrate, since the heating device moves in X (longitudinal), Y (lateral), and Z (vertical) directions to the substrate, the device can effectively move to a region where the organic EL material is placed on the substrate immediately after its placement so that the organic EL material can be heated and dried. Moreover, as mentioned above, because the heating device moves relative to the substrate, it is possible to heat only the region relating the ink drying. Consequently, the risk of heating the nozzle for applying the organic EL material and

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causing a change in the ink concentration or causing a poor ink discharge is lowered.

On the other hand, the '357 patent discloses a method of manufacturing an organic EL display by using the ink jet method. However, the '357 patent does not disclose nor suggest drying an organic EL material by heating while relatively moving a heating device in X (longitudinal), Y (lateral), and Z (vertical) directions to the substrate.

Further, in the '221 patent, it is disclosed that the light emitting layer or the like can be formed by using a roll-to-roll processing technique. The '356 patent, moreover discloses a method of drying the ink discharged with the ink jet method by use of an infrared heater displaced above and below the substrate transporting route. Nevertheless, the roll-to-roll processing technique provides a heating device which moves in a certain definite direction only, for instance in the X (longitudinal) direction, and does not move relative to the other directions such as Y (lateral), and Z (vertical) directions to the substrate.

In contrast, since the heating device of the present invention moves in X (longitudinal), Y (lateral), and Z (vertical) directions relative to the substrate, the present invention can provide the effects mentioned above.

Accordingly, the invention described in Claim 1 has characteristics different from any of the '357, '221 and '356 patents while also providing effects based on the characteristics unique to the present invention. Therefore, the present invention cannot be achieved by merely combining the inventions disclosed in the '357, '221 and '356 patents, and it would not have been obvious to one of ordinary skill in the art. Thus, the invention of Claim 1 is considered to be patentable in view of these cited prior art documents. For at least the same reasons, dependent Claims 2-6 are also considered patentable.

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In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicants respectfully submit that this application should now be in condition for allowance and respectfully request favorable consideration.

Respectfully submitted,



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